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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/547,415	04/11/2000	Faquir C. Jain	CONN-2	4421

7590 09/17/2003
Hung Chang Lin
8 Schindler Court
Silver Spring, MD 20903

EXAMINER

GARRETT, DAWN L

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 09/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/547,415

Applicant(s)

JAIN ET AL.

Examiner

Dawn Garrett

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6-30-2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-8,10-16,20,25-27,29 and 38-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 43 is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8,10-16,20,25-27,29,38-42 and 44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. This Office action is in response to the amendment, paper no. 19, signed June 30, 2003. Claims 1, 38, 39, 40, 41, 42, and 43 were amended. Claims 4, 9, 17, 19, 21, 23, 24, 28, and 30-37 are indicated as cancelled. Claims 1-3, 5-8, 10-16, 18, 20, 22, 25-27, 29, and 38-44 are currently pending.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. In the Office action mailed January 30, 2002, paper no. 9, the examiner objected to the listing of references in the specification as not being a proper form of information disclosure statement. In response, applicant deleted the listing of references. The examiner notes that the disclosure still lists reference numbers. It is suggested that applicant delete the Ref. numbers and in place of the reference numbers put the actual reference citation. Applicant did not amend the specification in paper no. 19, signed June 30, 2003.
4. The rejection of claims 1-3, 5-8, 10-16, 18, 20, 25-27, and 38-44 under 35 USC 112, first paragraph, set forth in paper no. 16 (mailed March 14, 2003), paragraph 16, is withdrawn.
5. The rejection of claims 1-3, 5-8, 10-16, 18, 20, 25-27, 29, and 38-44 under 35 USC 112, second paragraph, set forth in paper no. 16, paragraph 11 is withdrawn.

6. The objection to claim 42 set forth in paper no. 16, paragraph 14, is maintained.

This claim still depends from claim 1 and it is suggested claim 42 be written as an independent claim for the reasons previously set forth.

7. The objection to claim 43 set forth in paper no. 16, paragraph 14, is withdrawn.

8. The objection to claim 11 set forth in paper no. 16, paragraph 15 is maintained.

Claim 11 is objected to because it recites "first p-doped Si" and this term is no longer present in amended claim 1. It is suggested that the word "first" be deleted from claim

11.

9. The objection to claim 38 set forth in paper no. 16, paragraph 16, is maintained.

10. The objection to claim 42 set forth in paper no. 16, paragraph 16 is withdrawn.

11. The rejection of claims 1-3, 5-8, 10-16, 18, 20, 25-27, 29, and 38-44 under 35 USC 112, first paragraph set forth in paper no. 16, paragraph 17 is withdrawn due to the amendment of claim 1.

12. The rejections of claims 1-3, 5-8, 10-16, 18, 20, 25-27, 29, 38-44 under 35 USC 112, second paragraph set forth in paper no. 16, paragraphs 18-22 are withdrawn.

Claim Objections

13. Claim 1 is objected to because of the following informalities:

a. A period should be added to the end of claim 1. Appropriate correction is required.

b. In claim 3, "are" should be changed to "is".

Claim Rejections - 35 USC § 112

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claims 1-3, 5-8, 10-16, 18, 20, 22, 25-27, 29, 38, 39-42 and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 1 recites the limitation "said p-type layer" in line 10 of the claim.

This recitation is indefinite because there are two different p-type layers and it is unclear which p-type layer is intended.

b. Claim 1 recites "said wide energy gap layer" in line 10. There is no antecedent basis for this limitation as it is not previously recited in the claim.

Accordingly, the meaning of "said wide energy gap layer" can not be ascertained.

c. Claim 1, line 15 recites "n-type wide energy gap semiconductor layer", which does not have antecedent basis. The meaning of the phrase can not be understood as it is not previously recited in the claim. It is suggested that this phrase be changed to "semiconductor layer having n-type conductivity" for consistency in terminology.

d. Claim 2 recites "thin wide energy gap semiconductor layer" which is not present in claim 1. Clarification and correction are required.

e. Claim 13 recites "p-doped wide energy gap semiconductor layer" which is not present in claim 1. Clarification of this term and/or correction is required.

f. Claim 22 recites "p-doped wide energy gap semiconductor layer" which is not present in claim 1. Clarification of this term and/or correction is required.

Allowable Subject Matter

16. Claims 1-3, 5-8, 10-16, 18, 20, 22, 25-27, 29, 38-42 and 44 contain allowable subject matter as previously indicated in paper no. 16, paragraph 23. Independent claim 43 is allowed.

Response to Arguments

17. Applicant's arguments filed June 30, 2003 have been fully considered but they are not persuasive. Applicant states claim 42 is now in independent form. The examiner respectfully notes that claim 42 remains dependent upon claim 1. Applicant also states "first" in claim 11 has been deleted, but the examiner respectfully notes the word "first" remains in claim 11. Applicant further indicates "comprising of" has been replaced by comprised of in claim 38, but the examiner respectfully notes "comprising of" is still in claim 38. The rejections under 35 USC 112, second paragraph, discussed by applicant have been withdrawn in this Office action.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (703) 305-0788. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached at (703) 308-0449. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2351.

D.G.
September 15, 2003

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

